

Claims:

1. An accident sensor for triggering a safety system in a motor vehicle,
comprising:

a deformable and radiation transparent synthetic material part, wherein the
5 material part is penetrated by a defined quantity of light traveling in a beam path; and

a radiation sensitive detector that optically detects a deformation of the material
part by detecting a change in the beam path to determine a position of impact on the
motor vehicle based a signal waveform and a determination of the transit time between
impact and the detection of the signal,

10 wherein the material part is arranged externally on the motor vehicle.

2. The accident sensor of claim 1, wherein the material part forms a collision and
scratch protector for the motor vehicle.

15 3. The accident sensor of claim 2, wherein the position of the impact on the
motor vehicle is determined according to a spatial orientation of the radiation sensitive
detector.